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Benazepril Hydrochloride

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BENAZEPRIL HYDROCHLORIDE

Water Solubility Literature Value After Converting to g/100 mL [3]

$$\left(\frac{2.229\ mg}{1\ L}\right)\left(\frac{1\ g}{1000\ mg}\right)\left(\frac{1\ L}{1000\ mL}\right)\left(\frac{100}{100}\right) =$$

2.229×10^{-4} g/100 mL

Water Solubility Literature Value [1]

2.229 mg/L

Water Solubility in Word [1]

Benazepril HCl is not soluble in water.

Calculating Molar Mass [3,9]

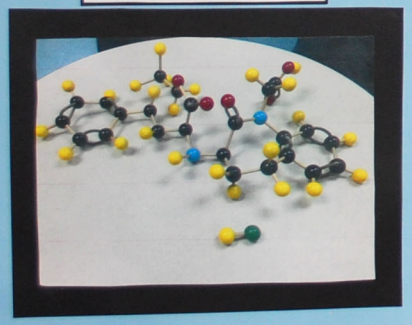
1) 24 mol C × $\left(\frac{12.01\ g\ C}{1\ mol\ C}\right)$ = 288.24 g of C
2) 28 mol H × $\left(\frac{1.01\ g\ H}{1\ mol\ H}\right)$ = 28.28 g of H
3) 2 mol N × $\left(\frac{14.01\ g\ N}{1\ mol\ N}\right)$ = 28.02 g of N
4) 5 mol O × $\left(\frac{16.00\ g\ O}{1\ mol\ O}\right)$ = 80 g of O
5) 1 mol H × $\left(\frac{1.01\ g\ H}{1\ mol\ H}\right)$ = 1.01 g of H
6) 1 mol Cl × $\left(\frac{35.45\ g\ Cl}{1\ mol\ Cl}\right)$ = 35.45 g of Cl
7) 288.24 + 28.28 + 28.02 + 80 + 1.01 + 35.45 =

461 g/mol $C_{24}H_{28}N_2O_5{\cdot}HCl$

Literature Value of Molar Mass [8]

460.96 g/mol $C_{24}H_{28}N_2O_5{\cdot}HCl$

Molecular Model [8]

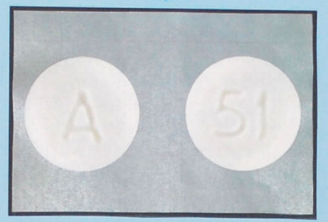


Chemical Formula [8]

$C_{24}H_{28}N_2O_5{\cdot}HCl$

Chemical Name [8]

(3S)-3-[[(1S)-1-(Ethoxycarbonyl)-3-phenylpropyl]amino]-2,3,4,5-tetrahydro-2-oxo-1H-1-benzazepine-1-acetic acid·HCl; (3S)-1-(carboxymethyl)-[[(1S)-1-(ethoxycarbonyl)-3-phenylpropyl]amino]-2,3,4,5-tetrahydro-1H-[1]-benzazepine-2-one·HCl; (3S)-3-[[(1S)-1-carboxy-3-phenylpropyl]amino]-2,3,4,5-tetrahydro-2-oxo-1H-1-benzazepine-1-acetic acid 3-ethyl ester·HCl



Labeled Uses [7]

Benazepril HCl is used for the treatment of mild to moderate hypertension.

Unlabeled Uses [7]

Benazepril hydrochloride may be used to protect the kidney as well as to treat congestive heart failure.

Generic Name [7]

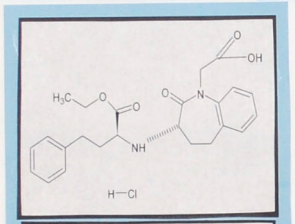
Benazepril Hydrochloride

Trade Names [7]

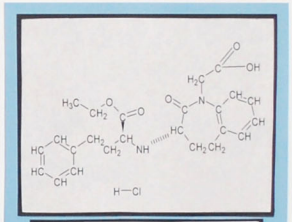
Briem; Cibacen; Fortekor; Iotensin

Classification of Drug [7]

Antihypertensive; Renin Angiotensin System Antagonist



Condensed Structure [8,10]



Expanded Structure [8]

How It's Supplied [2]

Benazepril Hydrochloride can be supplied in.....

- 5 mg oral tablets.
- 10 mg oral tablets.
- 20 mg oral tablets.
- 40 mg oral tablets.

Dosage/Chosen Dose [7]

5 mg

Tablets Per Chosen Dose [3,9]

$$\left(\frac{5\ mg\ Benazepril\ HCl}{1\ Day}\right) \times \left(\frac{1\ Tablet\ of\ Benazepril\ HCl}{1\ mg\ Benazepril\ HCl}\right) =$$

5 tablets of Benazepril HCl

How The Body Takes It In [7]

Benazepril hydrochloride can be taken orally by mouth.

After It Is Absorbed [7]

Benazepril HCl is absorbed by means of the gastrointestinal tract where about 37% of it will be distributed throughout the body in about two to six hours

How The Body Breaks It Down [7]

The body processes and breaks down benazepril HCl in the liver into benazeprilat (active metabolite) by separating/cutting it from the chemical bonds of benazepril.

How The Body Eliminates It [7]

Benazepril HCl primarily comes out of the body through urine.

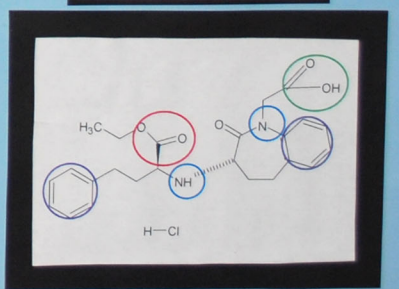
Functional Group Contribution [3]

- Aromatic = Hydrophobic, neutral.
- Amines(Tertiary) = Hydrophilic, less basic than other amines.
- Ketones = Hydrophilic, neutral.
- Carboxylic Acid = Hydrophilic, neutral.
- Ester = Hydrophilic, neutral

Functional Groups [3,9]

- Aromatic = Purple
- Amines = Blue
- Ketones = Orange
- Ester = Red
- Carboxylic Acid = Green

Functional Groups Highlighted [3,9]



References

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